

CLAIMS

WHAT IS CLAIMED:

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1. A method for ring-trip detection in a line card, comprising:
using a digital-to-analog converter for processing voice signals;
receiving a ringing control signal;
transmitting a ringing signal to a subscriber line in response to the ringing control
signal;

receiving a portion of the ringing signal from the subscriber line;

converting the portion of the ringing signal to a digital signal using the digital-to-
analog converter; and

providing a ring-trip indication in response to the digital signal.

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2. The method of claim 1, wherein the ringing signal comprises an AC signal.

3. The method of claim 1, further including terminating the ringing signal in
response to the ring-trip indication.

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4. A method, comprising:

processing a voice signal in a low-current mode of a line card, the line card having an

~~analog-to-digital converter for converting the voice signal to a digital signal;~~

receiving a ringing control signal;

switching to a high-current mode of the line card in response to the ringing control

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signal; and

- ringing a telephonic device in response to switching to the high-current mode of the line card;
- converting the portion of the ringing signal to a digital signal using the digital-to-analog converter; and
- 5 providing a ring-trip indication in the high-current mode in response to the digital signal.
5. The method of claim 4, wherein the ringing signal comprises an AC signal.
- 10 6. The method of claim 4, further including terminating the ringing signal in response to the ring-trip indication.
- 15 7. An apparatus, comprising:
first circuitry capable of processing a voice signal, the first circuitry including an analog-to-digital converter for processing the voice signal;
a ringing generator capable providing a ringing signal to a subscriber line in response to receiving a ringing control signal;
second circuitry capable of delivering the portion of the ringing signal to the analog-to-digital converter of the first circuitry, wherein the analog-to-digital converter converts the portion of the ringing signal to a digital signal; and
20 ring-trip detection logic capable of providing a ring-trip indication in response to the digital signal.
- 25 8. The apparatus of claim 7, further including third circuitry capable of terminating the ringing signal in response to the ring-trip indication.

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9. An apparatus, comprising:
- a feedback loop having an input and output terminal, the feedback loop including an analog-to-digital converter for processing voice signals;
- 5 a switch capable of coupling the input and output terminal of the feedback loop in response to receiving a control signal; and
- a ringing generator capable of providing a ringing signal to a subscriber line in response to the control signal.
- 10 10. The apparatus of claim 9, further including circuitry capable of:
- receiving at least a portion of the transmitted ringing signal from the subscriber line;
- and
- delivering the portion of the received ringing signal to the input terminal of the feedback loop.
- 15 11. The apparatus of claim 10, wherein the analog-to-digital converter of the feedback loop converts the received ringing signal to a digital signal.
12. The apparatus of claim 11, further including ring-trip detection logic, wherein
- 20 the ring-trip detection logic generates a ring-trip detection indication in response to the digital signal.
13. A line card, comprising:
- a subscriber line interface circuit capable of:
- 25 receiving a voice signal from the subscriber line;

delivering a ringing signal to the subscriber line; and

receiving at least a portion of the transmitted signal from the subscriber line;

and

logic capable of:

5 processing the voice signal using an analog-to-digital converter;

delivering the portion of the ringing signal to the analog-to-digital converter

for converting the portion of the ringing signal to a digital signal; and

providing a ring-trip indication in response to the digital signal.

10 14. The line card of claim 13, wherein the subscriber line integrated circuit is a voltage subscriber line interface circuit.

15 15. The line card of claim 14, wherein the subscriber line interface circuit is capable of receiving a data signal in a frequency band above voice signals.

16. The line card of claim 14, wherein the logic provides a ring-trip indication based on a power of the digital signal over a selected interval.

17. The line card of claim 14, wherein the ringing signal is an AC signal.

20 18. An apparatus for ring-trip detection, the apparatus having an analog-to-digital converter for processing voice signals, the apparatus comprising:

means for receiving a ringing control signal;

means for transmitting a ringing signal to a subscriber line in response to the ringing

25 control signal;

means for receiving a portion of the ringing signal from the subscriber line;
means for converting the portion of the ringing signal to a digital signal using the
analog-to-digital converter; and
means for providing a ring-trip indication in response to the digital signal.